SURGERY.

UNDER THE CHARGE OF

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The Food and Digestion after Complete Removal of the Stomach—Œsophagoenterostomy.—The complete removal of the stomach in man is an operation seldom attempted and more rarely successful as regards the future of the patient. SCHLATTER (*Correspondenzblatt für Schw. Aerzte*, December 1, 1897) reports the following interesting successful operation:

The patient, a female, was fifty-six years of age. She had always had trouble with her stomach from childhood, and, of late, pains and vomiting. Blood and bile were occasionally present. Medicinal treatment was of no avail, and, a tumor being recognized, she was sent to the hospital. She was very thin. Palpation showed a tumor, oval in shape and the size of two fists, occupying the region of the stomach. She was unable to retain any food except milk, and desired operation. There was no free hydrochloric acid.

The exploratory laparotomy showed a hard tumor extending from the pylorus to the cardiac end of the stomach; there were at the pyloric end three soft glands, and the tumor was mobile. Gastroenterostomy was impossible, as the whole stomach was invaded, and the only alternative was the total removal of the stomach.

The stomach was drawn down, the œsophagus seized with a Wölfler's compression-forceps, and the œsophageal end of the stomach with a Stille's forceps, and then resected. Access was obtained to the œsophagus by tearing through the greater and less omentum with Pean's forceps, and ligating with silk. The resection at the pyloric end was done in a like manner. The lymphatic glands were readily removed by blunt dissection. It was found to be impossible to connect the duodenum and œsophagus end to end. The duodenal end was therefore tucked in and closed by a double row of sutures. The duodeno-jejunal fold was then sought, and, when found, it was readily connected to the œsophagus by a lateral and end anastomosis by a series of interrupted silk sutures in the mucosa, and of Lembert sutures in the serous surfaces. The release of the ends allowed the œsophagus to retract, so that the line of union was brought up toward the diaphragmatic œsophageal opening. The abdominal wound was then closed and a dressing applied. A pathological and histological examination of the ends of the tumor showed that the entire stomach had been removed and that there were portions of the œsophagus and duodenum on the tumor-mass removed.

Nutritive enemata were given containing eggs, milk, and brandy. The patient's pulse after operation was 96 and evening temperature 36.4° C. The following day the pulse went up to 142, but the temperature was 37.3° C. The enemata were continued, and during the afternoon tea, with milk, was given per os, and was well borne. The second day the enemata were not retained, and a half glass of Bordeaux was given, a teaspoonful at a time; the temperature rose to 38.1° C. and the pulse to 160, but remained full and strong. The patient had sharp attacks of pain in the region of the stomach. The third day milk, eggs, bouillon, and wine were taken in small doses every two hours, with pepsin and dilute muriatic acid. The pulse was 146 and the highest temperature 38.1° C. On the seventh day the dressings were removed and the wound found to have healed per primam. The first stool was on the fourth day; thereafter, two to three fluid stools. Occasionally there was some milk regurgitated. Ten days after the operation the patient vomited; the diet had become much greater in amount, though administered in small doses.

Twenty days after the operation the patient had for dinner half a chicken, and rested till 4.30 P.M.; she took her usual milk and egg at 6.30; at 7.30 she vomited, with marked contraction of the abdominal muscles, together with considerable choking. There were about 300 c.cm. of fluid, containing the milk, some egg taken an hour before, and some shreds of flesh. After vomiting the patient had a bitter, gally taste in her mouth. On several other occasions the patient vomited. Chemical examination showed the absence of free hydrochloric acid and the presence of lactic acid, with the evidence of the action of trypsin upon the food. Gallic acid and bile pigments were also present. The pepsin and hydrochloric acid were discontinued.

In the first two months after the operation the patient gained about 4400 grammes.

The relation of the stomach to digestion and the bearing upon nutrition, after operation of the total removal of the stomach, the author believes have been shown by this case to be somewhat different from the physiological function usually ascribed to it.

In these cases the disease has so modified the capacity of the stomach and its secretions that it is far from normal, and the system is, as it were, accustomed to doing without it before it is removed. The study of the necessary modification in the diet which the operation required showed the author what the physiological function of the normal stomach was and what loss the system had sustained.

His investigation showed that one of the chief functions of the stomach is that of a reservoir. The food is retained here for a greater or less length of time, according to its digestibility, preventing the intestines from overloading. Extremes of temperature are also corrected, and their harmful action on the intestines prevented. Food was given in small amounts, frequently repeated, and of a character most easily assimilated.

The chemical action of the stomach was at first supplied by pepsin and hydrochloric acid, but the pepsin was useless in the alkaline fluids of the intestine, and the hydrochloric acid was neutralized, so both were discontinued. The action of the stomach on bacteria and in restraining decomposition was found to be very slight; at least their absence produced no marked change; while the absorption attributed to the stomach is of a very slight degree.

Observations on the relative rapidity of the passage of food through the alimentary tract did not show any marked acceleration, and the chemical analysis of the urine showed no marked alteration.

In this patient the author studied carefully the mechanism of vomiting, and defines it as a complicated act with a number of movements of the muscles of the stomach, œsophagus, the muscles of swallowing, the diaphragm and abdominal muscles. The complicated movements can only arise from a centric source, and these vomiting centres may be stimulated reflexly in a variety of ways.

The gain in weight which the patient showed, which persisted for so long a time after the operation, shows that the stomach is chiefly a protective organ for the intestines and that the intestines, with proper feeding, are capable of entirely replacing the chemical action of the stomach.

On the Immediate Reduction of the Deformity of Pott's Disease of the Spine.—TUBBY (*The Practitioner*, January, 1898), who has performed this operation sixty times, says that it is applicable only to certain cases, and that the following may be regarded as entirely unsuitable: 1. Those cases in which tubercle exists elsewhere. 2. Cases in which much wasting is present there; the pressure of the splint or the plaster-of-Paris jacket, which is used afterward, is apt to give rise to sores. 3. Children who suffer from a cough or other respiratory trouble. 4. Cases in which abscesses are present. 5. Cases in which firm ankylosis has taken place. 6. Cases in which considerable alterations in the shape of the bony framework of the chest have occurred. 7. Patients over twenty years of age are, as a rule, not suitable subjects. 8. Cervical curves are not suitable, for obvious reasons, and in cervico-dorsal curves it is difficult to maintain the reduction on account of the leverage arising from the weight of the head. The size of the curve, provided it is recent, is not necessarily a hinderance, since experience has shown that curves of moderate size yield more readily than small projections.

The cases which are suitable are those in which the disease is recent; in which the angle of curvature is a changing one, the patient is under twenty, the general health fair, and the disease is not so active as to give rise to general constitutional disturbance. Lower dorsal and lumbar curves are, *cæteris paribus*, the most suitable for reduction. *A priori*, the method would seem certain to produce paralysis, but cases that were paretic and paraplegic recovered complete movement and sensation subsequently to the operation.

The author then gives in detail the method of preparing the patient and of performing the operation. He prefers to use a modified double Thomas' hip-splint, with head-rest, rather than the plaster-of-Paris dressing, as it is possible to get at the patient more readily if there is any respiratory complication, and there is not the same danger of producing sores. The patient must be carefully watched out of the anæsthetic. After a few days in the hospital the patient can be sent home, to return once a fortnight for inspection. At the end of two months the splint is removed to ascertain the condition of the parts.

The author does not report the ultimate results in any of the cases treated,